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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,248	08/24/2001	Dirk Kolowrot	H3381 PCT/US	7954

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EXAMINER
MUSSER, BARBARA J

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/787,248	Applicant(s) KOLOWROT ET AL.	
	Examiner Barbara J. Musser	Art Unit 1733	

-- The MAILING DATE of this communication appears on the c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear in lines 2-3 if the number average molecular weight or weight average molecular weight is intended to be at least 4,000 as the other claims requiring a molecular weight of at least 4,000 are directed to number average molecular weight.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 15-20 and 22-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. as evidenced by Iwami et al. and Properties(Properties of Paraffinic SHELLFLEX Oils), and in view of Sustic(U.S. Patent 5,723,546)

Suzuki et al. discloses a sprayable hot melt adhesive with greater than 20wt% amorphous poly-alpha-olefin(APAO), less than 20 wt% oil, and 30-70wt% hydrocarbon resin tackifier used in making diapers.(Col. 7, ll. 27-Col. 8, ll. 10) The adhesive has a

melt viscosity of 500-10,000 cp at 180°C.(Col. 1, ll. 65-67) The reference does not disclose the softening temperature of the hydrocarbon but does disclose it can be CLEARON (Col. 7, ll. 59; Col. 14, ll. 35) CLEARON P105 has a softening temperature of 105°C as evidenced by Iwami et al. which disclose CLEARON P105 has a softening temperature of 105°C.[0035]

The reference does not disclose the viscosity of the oil, but does disclose it can be a paraffinic SHELLFLEX oil.(Col. 8, ll. 3-4) Properties discloses that some paraffinic SHELLFLEX oils have viscosities of 19.4-70.3 mPas at 40C.(Table 1)

The reference does not disclose using a mixture of APAOs. Sustic discloses a mixture of APAOs which has high tensile strength.(Col. 3, ll. 21-27; Abstract) Some of this mixture of APAOs can have softening temperatures of 70-140°C and a melt viscosity of 8,000-145,000 cp at 150°C.(Table 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the mixtures of APAOs of Sustic in the adhesive composition of Suzuki et al. since Suzuki et al. discloses any APAO can be used and since Sustic discloses that the mixtures of the reference have greater tensile strength than conventional APAOs(Col. 3, ll. 21-26) which would be useful in diapers so that the layers of the diaper do not separate in use. While the range of softening temperatures and melt viscosities of the APAO mixtures of Sustic encompass the claimed range, Suzuki et al. discloses the adhesive composition has a viscosity of 500-10,000 cp at 180C.(Abstract) Therefore one in the art would appreciate that the APAO mixtures of Sustic having the lower softening temperatures and melt viscosities would be used as otherwise the viscosity and softening temperature of the

adhesive composition would be too high since the APAO mixture is more than 20% of the adhesive and too high a melt viscosity for the APAO mixture would result in a higher melt viscosity for the adhesive composition than is desired in Suzuki et al.

Regarding claims 16, 20, 28, 31, and 35, one component of the APAO can have a number average molecular weight of above 15,000, and the ratio of weight average molecular weight to number average molecular weight is 6 or less.(Col. 5, ll. 55-65)

Regarding claim 17, as the viscosity of the adhesive can be 500 cp at 180°C, one in the art would appreciate that it would be less than 1,900 cp at 150°C since the viscosity does not tend to rise appreciably with temperature until the components near their softening temperatures.

Regarding claim 18, one component of the APAO contains 30-90% butene and 90-30% propylene.(Col. 5, ll. 14-17)

Regarding claim 19, the APAO mixture can have a viscosity of 4,000-8,000 cp at 150°C and therefore would have a viscosity less than 15,000 cp at 190C.(Tables II and III)

Regarding claim 20, the APAO mixture can have a needle penetration of 7(Table 3). While the reference is silent as to density, the polymers I the Tables are know to be low density polymers.

Regarding claim 22, using medicinal white oils as the plasticizer is well-known and conventional in the adhesive arts. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any well-known and

conventional oil such as medicinal white oil as the plasticizer since such oils are well-known and conventional in the adhesive arts.

Regarding claim 23, the hydrocarbon can be a C9 based petroleum.(Col. 7, ll. 55)

Regarding claim 24, pigments and stabilizers are well-known and conventional additives to adhesives. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add any well-known and conventional additives such as stabilizers or pigments to the adhesive since such additives are well-known and conventional in the adhesive arts.

Regarding claim 26, since the materials used are the same as applicant in the same proportions as applicant, the viscosity of the adhesive at 100°C would be in the same range as applicant's.

Regarding claims 27, 29, 30, and 33, the adhesive is used to bond together a nonwoven and a polyethylene film.(Col. 6, ll. 35-61) The composite can be used in a diaper.(Col. 1, ll. 8) The adhesive is applied at a weight of 0.5-7 g/m^2.(Col. 3, ll. 14-19) The coating temperature can be 170°C.(Col. 12, ll., 66-67)

Regarding claim 32, the adhesive can be applied at a rate of 200 m/min.(Table 3) While the only coating temperature listed is 170, one in the art would appreciate that the adhesive could be applied at any temperature where the materials are liquid and capable of being sprayed. Absent unexpected results, the coating temperature is considered obvious.

Regarding claim 34, while the reference does not disclose the conditions under which the adhesive is mixed, one in the art would appreciate that the mixing would be done under an inert atmosphere since that would prevent reaction of the materials with oxygen as it well-known and conventional in the chemical arts.

5. Claims 15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. as evidenced by Iwami et al. and Properties, and in view of Simmons et al.(WO 97/33921).

Suzuki et al. discloses a sprayable hot melt adhesive with greater than 20wt% amorphous poly-alpha-olefin(APAO), less than 20 wt% oil, and 30-70wt% hydrocarbon resin tackifier.(Col. 7, ll. 27-Col. 8, ll. 10) The adhesive has a melt viscosity of 500-10,000 cp at 180°C.(Col. 1, ll. 65-67) The reference does not disclose the softening temperature of the hydrocarbon but does disclose it can be Clearon(Col. 7, ll. 59; Col. 14, ll. 35) Clearon P105 has a softening temperature of 105°C as evidenced by Iwami et al. which disclose Clearon P105 has a softening temperature of 105°C.[0035]

The reference does not disclose the viscosity of the oil, but does disclose it can be a paraffinic SHELLFLEX oil.(Col. 8, ll. 3-4) Properties discloses that some paraffinic SHELLFLEX oils have viscosities of 19.4-70.3 mPas at 40C.(Table 1)

The reference does not disclose the softening temperature or melt viscosity of the APAO. Simmons et al. discloses an APAO which can be used in hot melt adhesives which is comprised of two components- a first APAO with a molecular weight less than 20,000 and a second APAO with a molecular weight less than 6,000.(Pg. 5, ll. 18-Pg. 6, ll. 6) It would have been obvious to one of ordinary skill in the art at the time the

invention was made to use the APAO of Simmons et al. in the adhesive of Suzuki et al. since the APAO has a balance of properties superior to those known previously.(Pg. 4, ll. 17-19) While the reference does not disclose the specific melt viscosities, viscosity is dependent on molecular weight and thus these APAOs would have viscosities within the claimed ranges.

6. Claims 15, 24, 25, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al.(U.S. Patent 5021,257).

Foster et al. discloses a sprayable hot melt adhesive with 30-70wt% APAO having a viscosity of 2,000-20,000 cp at 190°C, 20-50wt% hydrocarbon with a softening temperature of 70-145°C, and 0-30wt% oil.(Col. 2, ll. 20-48) The adhesive has a viscosity of 3,000-25,000 cp at 135°C(Col. 2, ll. 1) and thus would have an even lower viscosity at 150°C. The oil has a viscosity of 10-50 mPas at 23 C.(Col. 5, ll. 52) The reference discloses multiple APAOs can be used.(Table 1) The reference does not disclose the softening temperature of the APAOs. However, the softening temperature of the adhesive is 90-125°C.(Col. 2, ll. 1-3) Since the adhesive has a softening temperature of 90-125°C and the hydrocarbon has a softening temperature in the same range, one in the art would appreciate that the APAO would have a softening temperature in the same range as otherwise the mixture would not end up with a softening temperature of 90-125°C.

Regarding claim 24, the reference discloses the adhesive can contain pigments and nucleating agents.(Col. 6, ll. 50-54)

Regarding claims 27 and 29, the adhesive can be used on a diaper.(Col. 6, ll. 60)

Response to Arguments

7. Applicant's arguments with respect to claims 15-35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is **(703)-305-1352**. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

BJM
August 13, 2003

Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700